



### **B66 A Comparison of the Sensitivity of the Power Plex®16, Identifiler®, and SeFiler® Kits for the STR Testing of 9 – 12-Year-Old Bone Samples Throughout the Former Yugoslavia**

*Edina Omerovic, BS\*, Lejla Smajlovic, BS, Jon M. Davoren, MS, Rijad Konjhodzic, BS, and Edwin F. Huffine, MS, International Commission on Missing Persons, Alipasina 45a, Sarajevo, 71000, Bosnia and Herzegovina*

The goal of this presentation is to compare the sensitivity levels of the Power Plex®16, Identifiler®, and SeFiler® kits for producing STR profiles on DNA from bone samples. These three kits have differences in the quality of profile that is produced when used to amplify DNA from 9 – 12 year bone samples. Optimizations, of a number of parameters, have been performed for each of these kits and will be discussed.

The breakup of the former Yugoslavia left approximately 30,000 – 40,000 missing persons. For most of these people there were no medical records that could aid in the identification process so that left DNA testing as the only method for identification of mortal remains. One of the difficulties of mass testing of bone samples is that DNA isolated from virtually every bone exhibits significant levels of degradation, contamination by microbial DNA, and inhibition of PCR amplification.

In an attempt to overcome these limitations the ICMP has optimized the Promega PowerPlex® 16, the Applied Biosystems Amplf STR Identifiler® and the Amplf STR SeFiler® kits for the amplification of DNA from 9-12 year old bone samples. Each of these kits has been optimized for cycling parameters, amounts of *taq* polymerase and magnesium concentration. Initial findings show that on average the PowerPlex16 system amplifies the most loci however it also produces more non specific amplification products than the other two kits.

**DNA, STR, PowerPlex® 16**